

Thank you for your comment, Lisa Belenky.

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Solar Energy Development PEIS
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First Name: Lisa
Middle Initial:
Last Name: Belenky
Organization: Center for Biological Diversity
Address: 351 California Street
Address 2:
Address 3:
City: San Francisco
State: CA
Zip: 94104
Country: USA
Email: lbelenky@biologicaldiversity.org
Privacy Preference: Don't withhold name or address from public record
Attachment: CBD BLM SASE comments for PDEIS 9 14 09 final w exhibits.pdf

Comment Submitted:



VIA WEB UPLOAND AND U.S. MAIL (with references)

September 14, 2009

Solar Energy PEIS
Argonne National Laboratory
9700 S. Cass Avenue—EVS/900
Argonne, IL 60439
Web submission at: <http://solareis.anl.gov/involve/comments/index.cfm>

Re: Notice of Availability of Maps and Additional Public Scoping for Programmatic Environmental Impact Statement To Develop and Implement Agency-Specific Programs for Solar Energy Development; Bureau of Land Management Approach for Processing Existing and Future Solar Applications

To whom it may concern:

Please accept the following comments on Notice of Availability of Maps and Additional Public Scoping for Programmatic Environmental Impact Statement To Develop and Implement Agency-Specific Programs for Solar Energy Development; Bureau of Land Management Approach for Processing Existing and Future Solar Applications (“NOI Maps”) for the programmatic environmental impact statement (PEIS) to evaluate solar energy development on public lands in six western states and the maps provided for public review. These comments incorporate by reference our earlier scoping comments on the PEIS submitted on July 15, 2008.

The Center for Biological Diversity (“Center”) is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 220,000 members and online activists from throughout the country who are interested in the conservation and management of our public lands including over 40,000 members many of whom reside in the six western states which are the focus of this PEIS - Arizona, California, Colorado, New Mexico, Nevada, and Utah.

I. Introduction

The Center for Biological Diversity is dedicated to ensuring that atmospheric CO₂ levels are reduced to below 350 ppm, which leading climate scientists warn is necessary to prevent catastrophic climate change. If greenhouse gas emissions are not immediately reduced, the current atmospheric CO₂ level of almost 390 ppm will rise to approximately 500 ppm by mid-century, triggering mass wildlife extinctions, disruptive global weather and ecosystem changes,

and widespread human suffering. Energy conservation and a rapid transition to renewable energy are necessary to bring about the required CO₂ reductions, but important habitats and wild areas should not be sacrificed to meet these targets.

Accordingly, the development of renewable energy is a critical component of efforts to reduce greenhouse gas emissions and avoid the worst consequences of global warming but must be paired with immediate efforts to require conservation. Simply increasing available energy by adding renewable sources will not achieve the needed greenhouse gas reductions to stem the tide of global warming. The Center strongly supports the development of renewable energy production, and the generation of electricity from solar power, in particular. However, like any projects, solar power projects must be thoughtfully planned to minimize impacts to the environment. For example, large scale industrial solar projects that are the subject of the PEIS should avoid impacts to sensitive species and habitats and, optimally, such projects should be sited in proximity to the areas of electricity end-use in order to reduce the need for extensive new transmission corridors and the efficiency loss associated with extended energy transmission. Only by maintaining the highest environmental standards with regard to local and regional impacts, and effects on species and habitats, can renewable energy production be truly sustainable.

II. Alternatives Analysis

Disturbed Lands

To the extent that large industrial-scale solar projects are needed to meet renewable energy goals, developers should be encouraged to first look to already disturbed lands to site these projects, whether those disturbed areas are on public or private lands. As part of the planning process, BLM should identify alternative sites for the zones including, specifically, areas where environmental values including plant and wildlife habitat was destroyed or heavily impacted due to past projects (such as mining) or other uses and encourage the re-use of these lands for solar projects and other renewable energy projects. In this way, impacts to remaining habitats and other resources on our public lands can be minimized while accommodating new industrial-scale solar power projects.

In addition, as discussed above regarding the purpose and need for this project, the public ownership of land should not be the deciding factor in responsible environmental siting for large-scale industrial solar projects -- several of which are proposed to cover more than six square miles in size. A robust alternatives analysis should include a review of alternative sites on disturbed land through out these six states that may be appropriate for solar industrial development regardless of ownership. This is true for both the zones and individual projects. In California, for example, several counties and local governments are actively working to attract large-scale solar development to previously disturbed private lands where infrastructure already exists and where these projects will have the greatest benefit for local economies. Siting in such areas would also avoid many of the impacts to species and habitats on our public lands. To the extent that there may be BLM lands adjacent to and interspersed with private disturbed lands that may be appropriate for siting renewable energy development BLM should consider those areas in this PEIS.

Water Conservation

Water is a precious and increasingly scarce resource in all of the southwestern states covered by the PEIS.¹ The PEIS should consider at least one alternative that would require the use of the most water efficient technologies by all solar projects on public lands including within the SEZs once adopted. The impacts from water withdrawals in arid environments are well known and can include impacts to surface springs and flows that are critical to many desert species from pupfish to bighorn sheep.² As discussed in the Center's earlier scoping comments on this project the DOI should ensure that all federal reserved water rights essential to the protection of rare, imperiled and listed species, are fully protected on all public lands including wildlife refuges, parks, forest lands, and BLM lands from both surface and groundwater withdrawals by large-scale industrial solar projects wherever they are sited. Specifically, the BLM must protect all water sources needed to ensure species and habitats survive and recover on our public lands.

For example, the proposed Amargosa_Valley Study Area lies up-gradient from the Ash Meadows National Wildlife Refuge, a biodiversity hotspot, home to at least 24 plants and animals found nowhere else in the world. Four fish and one plant species found there are currently listed as endangered.³ The refuge is ranked as B1 P1 M1 (Outstanding site biological significance, good chance of being immediately threatened, loss or irretrievable degradation of populations could occur within one year) by the Nevada Heritage Program.⁴ Thus, impacts from the water needs of any solar energy facility in this proposed zone are a major concern. The Amargosa Valley Study Area also lies up-gradient and adjacent to Death Valley National Park which could be affected by water withdrawals for solar plants in this proposed zone.

Clearly, in considering the study areas the BLM must fully identify and analyze both the potential water needs of the foreseeable solar development and the impacts such water use could have on the environment. Alternatives that would require far less water use, such as dry cooled technologies and others, must be considered in order to avoid significant impacts to the environment from the proposed development in all of the proposed zones in order to comply with both NEPA and the ESA. Specifically, BLM should consider alternatives that would: prohibit use of water for cooling; encourage technological innovation to eliminate or vastly reduce the water needed for cleaning solar panels and mirrors; require the use of recycled water where available; and require capture and treatment of all waste water so that it can be safely returned to groundwater basins through infiltration or reused on site.

¹ See, e.g., Barnett and Pierce, 2009, *Sustainable water deliveries from the Colorado River in a changing climate*, PNAS, www.pnas.org/cgi/doi/10.1073/pnas.0812762106; Barnett and Pierce, 2008, *When will Lake Mead Run Dry?* Water Resources Research, Vol. 44, W03201, doi:10.1029/2007WR006704, 2008.

² Deacon, James E., Williams, A.E., Williams, C.D., and Williams, J.E.; September 2007, *Fueling Population Growth in Las Vegas: How Large-scale Groundwater Withdrawal Could Burn Regional Biodiversity*, BioScience Vol. 57 No. 8 688-698.

³ Ash Meadows National Wildlife Refuge, at <http://www.fws.gov/desertcomplex/ashmeadows/>

⁴ Nevada Natural Heritage Program. 2006. Scorecard 2006: Highest Priority Conservation Sites. Carson City, NV. 57p.

Honoring Conservation Commitments for Donated Lands

The BLM should eliminate from consideration as SEZs all lands that were donated to the BLM for conservation. For example, several of the proposed zones in California include lands donated to the federal government by The Wildlands Conservancy with the understanding that the lands would be permanently protected. Eliminating these lands from consideration for the zones would uphold the government's original promise of protection of these lands and affirm the principle that lands donated for conservation must truly be conserved.

Smaller and/or Fewer Zones

California: For California the Center has produced a map based on a set of environmental criteria, attached hereto as Exhibit 1, that provides an alternative set of solar zones— eliminating Iron Mountain, reconfiguring and shrinking Riverside East and Pisgah, and adding potential alternative zones for study by the Chocolate Mountains, Westmoreland, and Antelope Valley where BLM land and disturbed private lands are in close proximity. In preparing this map the Center utilized the “Renewable Siting Criteria for California Desert Conservation Area” developed by a coalition of environmental groups and previously provided to the BLM (attached hereto as Exhibit 2).

It is important to note that the Center has found significant discrepancies between available GIS files for cultural resources and mapped cultural resources in BLM documents in California. While some of this may be intentional, because the locations of particularly sensitive cultural resources should not be disclosed to the public, but other discrepancies appear to be simply gaps or conflicts in the existing data. In any case, it appears that BLM will require better data sets on these important resources in order to fairly analyze impacts from the proposed solar zones. *We urge the BLM to fully engage in the required consultations with the affected tribes in all of the states to obtain the best possible data regarding the locations of all significant cultural sites as part of this process.*

Nevada: For Nevada, the Center urges the BLM to consider reconfiguring the East Mormon Mountain Study Area to provide a buffer for the Mormon Mesa and Beaver Dam Slope ACECs and desert tortoise critical habitat, and eliminating areas in the Toquop Wash conservation area.

For all of the Nevada proposed zones water is a major concern, therefore (as noted above) BLM should consider alternatives that would require far less water use, such as dry cooled technologies and others, in order to avoid significant impacts to the environment from the proposed development in all of these proposed zones. Moreover, conservation for many species in Nevada may be seriously inadequate at present⁵ and, therefore, the BLM must take this into consideration when assessing the baseline for conservation as well as in developing mitigation strategies in concert with this PEIS process and the development of the zones.

⁵ See, e.g., Greenwald and Bradley, 2008, Biological Conservation, *Assessing protection for imperiled species of Nevada, U.S.A.: are species slipping through the cracks of existing protections?* DOI 10.1007/s10531-008-9407-3

Exclusive Development in Zones vs. Development in Zones and Other Areas

The PEIS must also examine at least one alternative under which BLM would only approve solar projects within the designated zones. The fundamental purpose of designating study zones through this programmatic planning process must be to limit impacts to significant resources and limit sprawl across the landscape. Accordingly, the BLM should consider, and adopt, a policy of only approving new solar development within the designated zones on public lands until those zones are “filled.” To do otherwise would undermine basic planning principles and waste the staff time, money, and energy that the agencies have dedicated to this effort. One exception that could be considered in an additional alternative is to allow approval of a limited number of projects on brownfields or abandoned and former large-scale mining sites or other highly disturbed public lands in areas in proximity to existing transmission lines.

A thoughtful and through comparison of the foreseeable impacts of an alternative that limits solar development to the designated zones will likely show that it is environmentally superior, fully feasible, and will avoid many of the most significant impacts to sensitive resources including rare, imperiled and listed species and their habitats.

In addition, the Center once again urges the BLM to suspend consideration of the so-called “fast track” permits in California and Nevada in particular until this planning process is completed. One of the primary drivers behind the pressure to approve the so-called “fast track projects” is the timing of access to ARRA stimulus funds. Therefore the Center would support efforts to extend deadlines for ARRA funds for solar renewable projects on public lands to accommodate this PEIS planning process. To continue with the approval process for the so-called “fast track” projects truly “puts the cart before the horse” and is likely to result in *de facto* zones being created that do not meet any of the standards that the PEIS process is advocating and will undermining the fundamental purpose of this planning process.

Economic Incentives to Site in Zones

BLM must also insure that fees for the use of public lands for solar energy development as rights-of-way throughout the west adequately reflect the true cost to our public lands from the loss of habitats, movement corridors, and biodiversity. In order to encourage appropriate siting of these projects, the BLM should ensure that there are economic incentives to site industrial-scale solar projects within the SEZs once those areas are identified. The PEIS should consider at least one alternative that imposes substantially higher fees for projects outside of the SEZs—particularly those in in-tact habitat. The planning process will not accomplish its stated purposes if BLM fails to provide appropriate financial and other incentives to site projects in the zones and continues to approve projects outside the zones – increasing industrial sprawl across the landscape.⁶

⁶ The Center encourages the BLM to consider areas that were previously heavily disturbed such as brownfields or former large-scale mining sites and possibly fallowed agricultural areas in the deserts, as potential zones. However, even if these areas are not included in the zones they may provide some of the most appropriate sites for solar development particularly where they are also proximate to existing infrastructure and transmission. Financial

III. Desert Tortoise

As the BLM is well aware, the survival and recovery of the threatened desert tortoise is a key issue that must be addressed in the draft PEIS. Recent population genetics studies have confirmed that, as the 1994 Desert Tortoise Recovery Plan found, the desert tortoise population is distinctly different in each of the Recovery Units.⁷ This finding adds weight to the Recovery Plan's direction that land managers must consider the impacts to desert tortoise survival and recovery on a Recovery Unit basis. Similarly, mitigation measures must be tied to the Recovery Units so that the benefits to the species from mitigation measures are appropriately scaled to the impacts to each Recovery Unit.

As the Center and other conservation groups and scientists have pointed out to the BLM and other federal agencies repeatedly, and most recently in the context of the ongoing Fort Irwin expansion, the risks associated with desert tortoise translocation in general are quite high and the risks are vastly increased by the translocations undertaken in drought years and even more so after several years of drought. As such, while in translocation may prove necessary in order to accommodate some projects, it is largely a misnomer to call these activities "mitigation." While some individuals may survive the translocation, there is little evidence that it has any benefits to the species over the long-term. The PEIS must take this into account when considering the types and scale of mitigation measures that will be needed for impacts to the desert tortoise and its habitat from the designated zones particularly in California and Nevada.

Large scale translocations of desert tortoises have rarely been studied and no long-term studies of large scale tortoise translocations are available in the published literature. The most recent large scale translocation of nearly 600 tortoise from Fort Irwin in the spring of 2008 proved to be little more than a deadly experiment for both translocated tortoises and resident tortoises in the translocation "host" areas. While small scale translocations have had some better success due to the much greater care with which they were carried out including collecting detailed information about the tortoises before translocation, temporary fencing of the translocation site, moving the tortoises in the same geographic configuration as the site that they originally lived in, and providing some artificial burrows (which were in fact used by the tortoises).⁸ While some mortality was noted post-translocation, it was much reduced. In comparison, the 2008 translocation from Fort Irwin was associated with the death of over 250 tortoises including both translocated tortoises and resident tortoises.

We urge the BLM to thoroughly consider these issues regarding translocation which are, of course, in addition to the direct, indirect and cumulative impacts to the tortoise that BLM is well aware that will increase due to development. For example, such impacts include but are not

incentives could also be developed to encourage the re-use of such heavily disturbed areas if they are not included in the SEZs.

⁷ Murphy R.W., K.H. Berry, T. Edwards and A.M. McLuckie. 2007. A Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise, *Gopherus agassizii*. *Chelonian Conservation and Biology*, 2007, 6(2): 229–251.

⁸ Karl, A.E. 2007. Hyundai Motor America Mojave Proving Grounds Desert Tortoise Translocation Study, 2006 Annual Summary. Pgs. 20.

limited to, loss of habitat, increased roads, increased subsidies and nesting opportunities for ravens, increased subsidies for canids, and increased spread of disease due to disturbance.

IV. Comments on Specific Proposed SEZs

Below we provide some specific comments on the proposed zones in California and Nevada and the new areas identified for consideration as alternatives.

California

Riverside East: The proposed study area in eastern Riverside County should be reduced in size to avoid significant environmental impacts including: impacts to critical habitat, impacts to connectivity and movement corridors for tortoise and other wildlife; impacts to desert washes; impacts to rare plants; impacts to cultural and paleontological resources; and edge effects and other indirect and cumulative impacts to adjacent Joshua Tree National Park. The map submitted with these comments provides an alternative smaller Riverside East zone that should be studied.

Iron Mountain: The proposed study area for Iron Mountain should be eliminated in its entirety. This area is inappropriate for industrial scale solar development that cannot be cured by reconfiguring or reducing the size of this zone. We urge the BLM to consider other areas (such as those in Antelope Valley, Westmoreland, and the Chocolate Mountains) in lieu of the Iron Mountain proposed study area. This area is inappropriate for numerous reasons including, but not limited to, the following: inadequate electrical transmission facilities; occupied desert tortoise habitat and occupied desert bighorn habitat; habitat for several rare plants; lands that are part of the Citizen's Wilderness Inventory; significant cultural resources; and provides critical movement corridors for wildlife and gene flow.

Pisgah: The proposed Pisgah study areas should be scaled back and reconfigured to avoid impacts to rare plants, desert tortoise and the movement corridor in the Cady Mountains between the Ord-Rodman and Superior-Cronese Critical Habitat Units, cultural resources, former Catellus lands donated to the BLM for conservation purposes, and the unique Pisgah lava flows. See Exhibit 1 (map).

Imperial East: Based on our initial review, it appears that the resource conflicts in the proposed Imperial East study area may be able to be avoided through proper siting and mitigated. Flat-tailed horned lizards are known to inhabit this site (a species that has been proposed for listing in the past and will soon be re-proposed for listing in the wake of a successful lawsuit by the Center and other environmental groups). There may also be populations of rare plants on this site that will require appropriate seasonal surveys to identify.

Arizona

Bullard Wash, Brenda, and Gillespie Areas: The Center's initial review of these areas has not identified any substantial biological conflicts or barriers to development of these zones. We look forward to reviewing the detailed site-specific information that will be provided in the

PEIS to determine whether these proposed sites are indeed suitable for industrial scale solar development zones.

Nevada

Millers Study Area: A potential concern with this area is the possible presence of Tonopah milkvetch (*Astragalus pseudiodanthus*) a species that is categorized as G2/S2, globally and state imperiled due to rarity or other demonstrable factors.⁹ Impacts to this species should be included in the environmental impact statement (EIS) and alternatives considered to avoid impacts. Other concerns are impacts to desert bighorn sheep range to the immediate west and south, and use of mountains to the west by prairie falcons.

Gold Point Study Area: As an initial matter, this study zone appears to have few major biological concerns. Desert bighorn sheep are found in the surrounding mountain ranges, and prairie falcons utilize the mountains to the northwest.

Amargosa Valley Study Area: As noted above, the use of water in this study area is of great concern as it lies up-gradient from the Ash Meadows National Wildlife Refuge, a biological hotspot, home to at least 24 plants and animals found nowhere else in the world. Four fish and one plant species found there are currently listed as endangered. The refuge is an outstanding site biological significance under the Nevada Heritage Program. The site is also down-gradient from the Oasis Valley Important Bird Area (IBA) and the impacts to this area from any water withdrawals for solar development could also be severe be evaluated. Desert bighorn sheep habitat occurs to the south, west and northeast and these herds could be adversely affected if water use for solar plants draws down the water table potentially drying up critical local springs and seeps.

The site also contains occupied habitat for the desert tortoise, and is in immediate proximity to the Big Dunes Area of Critical Environmental Concern (ACEC) managed by the Bureau of Land Management, and home to the Giuliani's dune scarab (*Pseudocotalpa giulianii*), large aegilian scarab (*Aegialia magnifica*), and the Big Dune miloderes weevil (*Miloderes* sp (unnamed)). All these species are ranked as G1/S1 - globally and state critically imperiled due to extreme rarity, imminent threats, or biological factors.¹⁰ While outside of the ACEC, the possibility exists for the presence of these species on the study site and a full inventory should be conducted. Because the Amargosa Valley Study Area lies adjacent to Death Valley National Park the BLM must also consider impacts to the park and the potential need for a buffer zone to protect park resources.

Dry Lake Study Area: This area includes occupied desert tortoise habitat and overlies the Apex conservation site, identified as B1 P1 M1 (Outstanding site biological significance, good chance of being immediately threatened, loss or irretrievable degradation of populations could occur within one year) by the Nevada Heritage Program.¹¹ Among the species of concern found

⁹ Nevada Heritage Program, at <http://heritage.nv.gov/lists/coesmera.htm>

¹⁰ Nevada Heritage Program, at <http://heritage.nv.gov/lists/conye.htm>

¹¹ Nevada Natural Heritage Program. 2006. Scorecard 2006: Highest Priority Conservation Sites. Carson City, NV. 57p.

at the Study Area are Mojave gypsum bees (*Andrena balsamorhizae*), a species categorized as G2/S2, globally and state imperiled due to rarity or other demonstrable factors.¹² In addition, desert bighorn sheep range to the immediate north, west and east, and there is documented use of this area by golden eagles. Impacts to these and other species of concern in area should be included in the EIS and avoided.

East Mormon Mountain Study Area: The East Mormon Mountain site includes occupied desert tortoise habitat and is proximate to the Mormon Mesa and Beaver Dam Slopes ACECs, areas designated as critical habitat for the desert tortoise. These tortoise populations have experienced recent declines and are threatened by numerous other activities including grazing, ORV use, and residential development and associated infrastructure. Another concern is the availability of water to support the solar development, including the cumulative impacts from groundwater withdrawals to support community development on nearby privatized lands, and the impacts to tortoise habitat, fish, and water resources from the construction and operation of the proposed Lincoln County pipeline and the resulting impacts to fish and other aquatic resources.

The Study Area also overlies the Toquop Wash conservation site, an area ranked as B1 P1 M1 (Outstanding site biological significance, good chance of being immediately threatened, loss or irretrievable degradation of populations could occur within one year) by the Nevada Heritage Program.¹³ Among the species occurring at the conservation site are: Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*) a candidate species for listing under the Endangered Species Act; threecorner milkvetch (*Astragalus geyeri* var. *triquetrus*), a species listed by the State of Nevada as “Critically endangered – species threatened with extinction”; sticky buckwheat (*Eriogonum viscidulum*) a species listed by the State of Nevada as “Critically endangered – species threatened with extinction”; straw milkvetch (*Astragalus lentiginosus* var. *stramineus*), a species ranked as T2/S2 (globally and state imperiled due to rarity or other demonstrable factors); and banded Gilia monster (*Heloderma suspectum cinctum*), a species protected in the State of Nevada under Nevada Revised Statute 501.¹⁴ Desert bighorn sheep are found in the neighboring mountain ranges to the north and west.

As a result, as currently configured, industrial scale solar development in this area may have significant and impacts that would be difficult to avoid or mitigate and this area is likely not suitable for a zone.

Delamar Valley Study Area: The largest concern about this site is the availability of groundwater to support solar development in light of a proposal by the Southern Nevada Water Authority to extensively exploit the same groundwater basin for exportation to the Las Vegas Valley.¹⁵ The cumulative impacts from water developments in this basin on vegetation, springs, and animal species will likely be very significant.¹⁶ Desert bighorn sheep are found adjacent to

¹² Nevada Heritage Program, at <http://heritage.nv.gov/lists/coclark.htm>

¹³ Nevada Natural Heritage Program. 2006. Scorecard 2006: Highest Priority Conservation Sites. Carson City, NV. 57p.

¹⁴ Nevada Heritage Program, at <http://heritage.nv.gov/lists/coclark.htm>

¹⁵ Clark, Lincoln and White Pine Counties Groundwater Development Project, Scoping Package, July 2006, at: http://www.blm.gov/nv/st/en/prog/planning/groundwater_projects/snwa_groundwater_project/documents_and_maps.html

¹⁶ Deacon et al. 2007

the Study Area to the southwest, and the valley is regularly used by golden eagles. The Study Area is also near the Delamar Mountains Wilderness area and impacts to the wilderness should be addressed in the EIS.

Dry Lake Valley North Study Area: The largest concern about this site is (once again) the availability of groundwater to support the solar plant in light of a proposal by the Southern Nevada Water Authority to extensively exploit the same groundwater basin for exportation to the Las Vegas Valley.¹⁷ The cumulative impacts from water developments in this basin on vegetation, springs, and animal species will likely be very significant. The Eastwood milkvetch (*Asclepias eastwoodiana*) is a species of concern that is found within the Study Area. It is ranked as G2/S2 - globally and state imperiled due to rarity or other demonstrable factors.¹⁸ Desert bighorn sheep are found in the mountains to the west and east of the area.

V. Conclusion

Thank you for the opportunity to provide additional scoping comments for this Programmatic EIS. The Center looks forward to reviewing the Draft PEIS.

Sincerely,



Lisa T. Belenky, Senior Attorney
Center for Biological Diversity
351 California St., Suite 600
San Francisco, CA 94104
(415) 436-9682 x307
Fax: (415) 436-9683

Attachments: (uploaded and sent via U.S. Mail)

Exhibit 1: Map produced by Center for Biological Diversity.

Exhibit 2: Renewable Siting Criteria for California Desert Conservation Area

References: (Sent via U.S. Mail on CD Rom)

Barnett and Pierce, 2009, *Sustainable water deliveries from the Colorado River in a changing climate*, PNAS, www.pnas.org/cgi/doi/10.1073/pnas.0812762106;

¹⁷ Clark, Lincoln and White Pine Counties Groundwater Development Project, Scoping Package, July 2006, at: http://www.blm.gov/nv/st/en/prog/planning/groundwater_projects/snwa_groundwater_project/documents_and_maps.html

¹⁸ Nevada Heritage Program at <http://heritage.nv.gov/lists/colincol.htm>

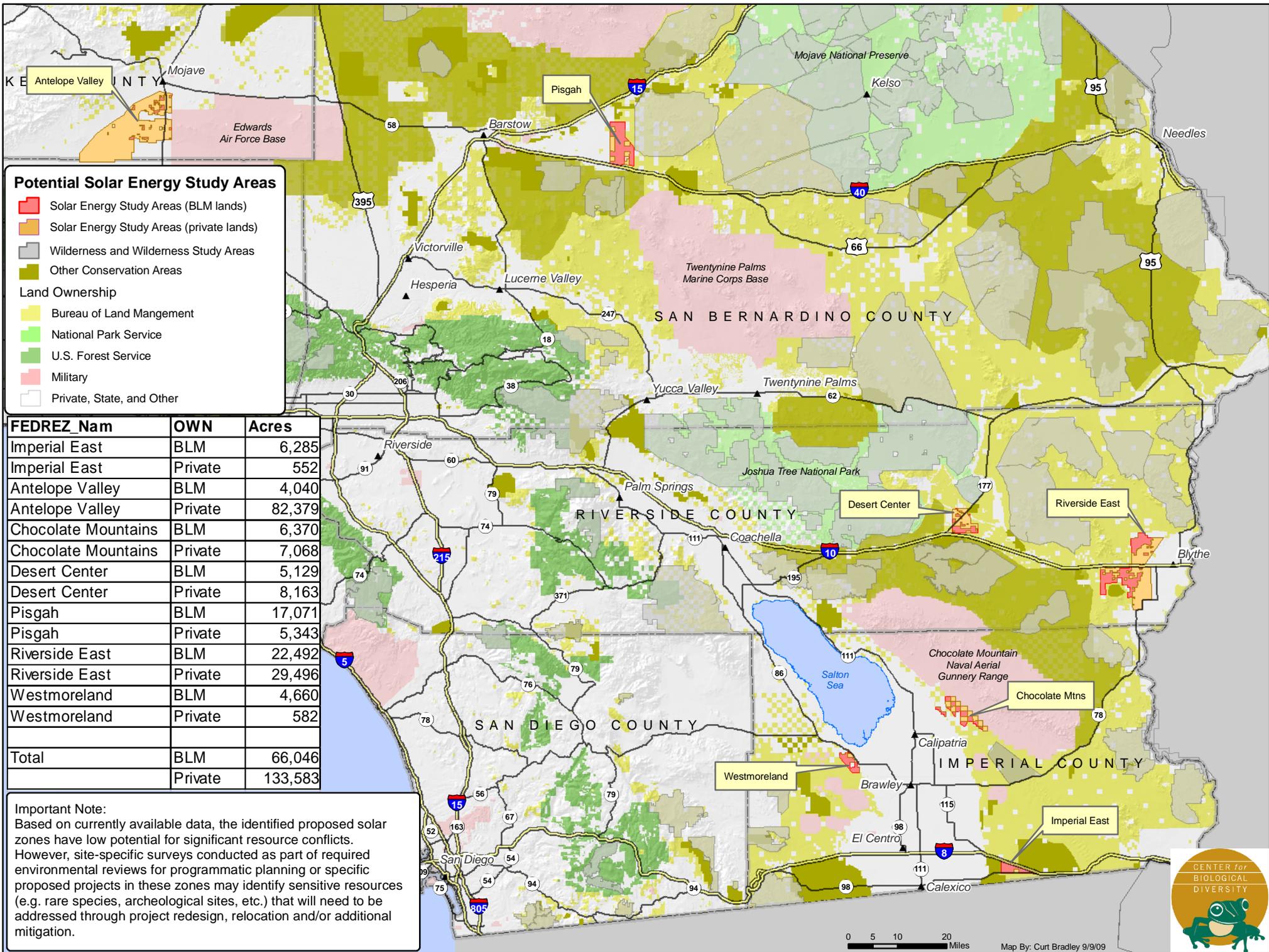
Barnett and Pierce, 2008, *When will Lake Mead Run Dry?* Water Resources Research, Vol. 44, W03201, doi:10.1029/2007WR006704, 2008.

Deacon, James E., Williams, A.E., Williams, C.D., and Williams, J.E.; September 2007, *Fueling Population Growth in Las Vegas: How Large-scale Groundwater Withdrawal Could Burn Regional Biodiversity*, BioScience Vol. 57 No. 8 688-698.

Greenwald and Bradley, 2008, Biological Conservation, *Assessing protection for imperiled species of nevada, U.S.A.: are species slipping through the cracks of existing protections?* DOI 10.1007/s10531-008-9407-3

Karl, A.E. 2007. Hyundai Motor America Mojave Proving Grounds Desert Tortoise Translocation Study, 2006 Annual Summary. Pgs. 20.

Murphy R.W., K.H. Berry, T. Edwards and A.M. McLuckie. 2007. *A Genetic Assessment of the Recovery Units for the Mojave Population of the Desert Tortoise, Gopherus agassizii*. Chelonian Conservation and Biology, 2007, 6(2): 229–251.



Potential Solar Energy Study Areas

- Solar Energy Study Areas (BLM lands)
 - Solar Energy Study Areas (private lands)
 - Wilderness and Wilderness Study Areas
 - Other Conservation Areas
- Land Ownership
- Bureau of Land Mangement
 - National Park Service
 - U.S. Forest Service
 - Military
 - Private, State, and Other

FEDREZ_Nam	OWN	Acres
Imperial East	BLM	6,285
Imperial East	Private	552
Antelope Valley	BLM	4,040
Antelope Valley	Private	82,379
Chocolate Mountains	BLM	6,370
Chocolate Mountains	Private	7,068
Desert Center	BLM	5,129
Desert Center	Private	8,163
Pisgah	BLM	17,071
Pisgah	Private	5,343
Riverside East	BLM	22,492
Riverside East	Private	29,496
Westmoreland	BLM	4,660
Westmoreland	Private	582
Total	BLM	66,046
	Private	133,583

Important Note:
 Based on currently available data, the identified proposed solar zones have low potential for significant resource conflicts. However, site-specific surveys conducted as part of required environmental reviews for programmatic planning or specific proposed projects in these zones may identify sensitive resources (e.g. rare species, archeological sites, etc.) that will need to be addressed through project redesign, relocation and/or additional mitigation.



Map By: Curt Bradley 9/9/09



Audubon California
California Native Plant Society * California Wilderness Coalition
Center for Biological Diversity * Defenders of Wildlife
Desert Protective Council * Mojave Desert Land Trust
National Parks Conservation Association
Natural Resources Defense Council * Sierra Club * The Nature Conservancy
The Wilderness Society * The Wildlands Conservancy

Renewable Siting Criteria for California Desert Conservation Area

Environmental stakeholders have been asked by land management agencies, elected officials, other decision-makers, and renewable energy proponents to provide criteria for use in identifying potential renewable energy sites in the California Desert Conservation Area (CDCA). Large parts of the California desert ecosystem have survived despite pressures from mining, grazing, ORV, real estate development and military uses over the last century. Now, utility scale renewable energy development presents the challenge of new land consumptive activities on a potentially unprecedented scale. Without careful planning, the surviving desert ecosystems may be further fragmented, degraded and lost.

The criteria below primarily address the siting of solar energy projects and would need to be further refined to address factors that are specific to the siting of wind and geothermal facilities. While the criteria listed below are not ranked, they are intended to inform planning processes and were designed to provide ecosystem level protection to the CDCA (including public, private and military lands) by giving preference to disturbed lands, steering development away from lands with high environmental values, and avoiding the deserts' undeveloped cores. They were developed with input from field scientists, land managers, and conservation professionals and fall into two categories: 1) areas to prioritize for siting and 2) high conflict areas. The criteria are intended to guide solar development to areas with comparatively low potential for conflict and controversy in an effort to help California meet its ambitious renewable energy goals in a timely manner.

Areas to Prioritize for Siting

- Lands that have been mechanically disturbed, i.e., locations that are degraded and disturbed by mechanical disturbance:
 - Lands that have been “type-converted” from native vegetation through plowing, bulldozing or other mechanical impact often in support of agriculture or other land cover change activities (mining, clearance for development, heavy off-road vehicle use).¹
- Public lands of comparatively low resource value located adjacent to degraded and impacted private lands on the fringes of the CDCA:²
 - Allow for the expansion of renewable energy development onto private lands.
 - Private lands development offers tax benefits to local government.
- Brownfields:
 - Revitalize idle or underutilized industrialized sites.
 - Existing transmission capacity and infrastructure are typically in place.

- Locations adjacent to urbanized areas:³
 - Provide jobs for local residents often in underserved communities;
 - Minimize growth-inducing impacts;
 - Provide homes and services for the workforce that will be required at new energy facilities;
 - Minimize workforce commute and associated greenhouse gas emissions.
- Locations that minimize the need to build new roads.
- Locations that could be served by existing substations.
- Areas proximate to sources of municipal wastewater for use in cleaning.
- Locations proximate to load centers.
- Locations adjacent to federally designated corridors with existing major transmission lines.⁴

High Conflict Areas

In an effort to flag areas that will generate significant controversy the environmental community has developed the following list of criteria for areas to avoid in siting renewable projects. These criteria are fairly broad. They are intended to minimize resource conflicts and thereby help California meet its ambitious renewable goals. The criteria are not intended to serve as a substitute for project specific review. They do not include the categories of lands within the California desert that are off limits to all development by statute or policy.⁵

- Locations that support sensitive biological resources, including: federally designated and proposed critical habitat; significant⁶ populations of federal or state threatened and endangered species,⁷ significant populations of sensitive, rare and special status species,⁸ and rare or unique plant communities.⁹
- Areas of Critical Environmental Concern, Wildlife Habitat Management Areas, proposed HCP and NCCP Conservation Reserves.¹⁰
- Lands purchased for conservation including those conveyed to the BLM.¹¹
- Landscape-level biological linkage areas required for the continued functioning of biological and ecological processes.¹²
- Proposed Wilderness Areas, proposed National Monuments, and Citizens' Wilderness Inventory Areas.¹³
- Wetlands and riparian areas, including the upland habitat and groundwater resources required to protect the integrity of seeps, springs, streams or wetlands.¹⁴
- National Historic Register eligible sites and other known cultural resources.
- Locations directly adjacent to National or State Park units.¹⁵

EXPLANATIONS

¹ Some of these lands may be currently abandoned from those prior activities, allowing some natural vegetation to be sparsely re-established. However, because the desert is slow to heal, these lands do not support the high level of ecological functioning that undisturbed natural lands do.

² Based on currently available data.

³ Urbanized areas include desert communities that welcome local industrial development but do not include communities that are dependent on tourism for their economic survival.

⁴ The term "federally designated corridors" does not include contingent corridors.

⁵ Lands where development is prohibited by statute or policy include but are not limited to:

National Park Service units; designated Wilderness Areas; Wilderness Study Areas; BLM National Conservation Areas; National Recreation Areas; National Monuments; private preserves and reserves; Inventoried Roadless Areas on USFS lands; National Historic and National Scenic Trails; National Wild, Scenic and Recreational Rivers; HCP and NCCP lands precluded from development; conservation mitigation banks under conservation easements approved by the state Department of Fish and Game, U.S. Fish and Wildlife Service or Army Corps of Engineers a; California State Wetlands; California State Parks; Department of Fish and Game Wildlife Areas and Ecological Reserves; National Historic Register sites.

⁶ Determining “significance” requires consideration of factors that include population size and characteristics, linkage, and feasibility of mitigation.

⁷ Some listed species have no designated critical habitat or occupy habitat outside of designated critical habitat. Locations with significant occurrences of federal or state threatened and endangered species should be avoided even if these locations are outside of designated critical habitat or conservation areas in order to minimize take and provide connectivity between critical habitat units.

⁸ Significant populations/occurrences of sensitive, rare and special status species including CNPS list 1B and list 2 plants, and federal or state agency species of concern.

⁹ Rare plant communities/assemblages include those defined by the California Native Plant Society’s Rare Plant Communities Initiative and by federal, state and county agencies.

¹⁰ ACECs include Desert Tortoise Desert Wildlife Management Areas (DWMAs). The CDCA Plan has designated specific Wildlife Habitat Management Areas (HMAs) to conserve habitat for species such as the Mohave ground squirrel and bighorn sheep. Some of these designated areas are subject to development caps which apply to renewable energy projects (as well as other activities).

¹¹ These lands include compensation lands purchased for mitigation by other parties and transferred to the BLM and compensation lands purchased directly by the BLM.

¹² Landscape-level linkages provide connectivity between species populations, wildlife movement corridors, ecological process corridors (e.g., sand movement corridors), and climate change adaptation corridors. They also provide connections between protected ecological reserves such as National Park units and Wilderness Areas. The long-term viability of existing populations within such reserves may be dependent upon habitat, populations or processes that extend outside of their boundaries. While it is possible to describe current wildlife movement corridors, the problem of forecasting the future locations of such corridors is confounded by the lack of certainty inherent in global climate change. Hence the need to maintain broad, landscape-level connections. To maintain ecological functions and natural history values inherent in parks, wilderness and other biological reserves, trans-boundary ecological processes must be identified and protected. Specific and cumulative impacts that may threaten vital corridors and trans-boundary processes should be avoided.

¹³ Proposed Wilderness Areas: lands proposed by a member of Congress to be set aside to preserve wilderness values. The proposal must be: 1) introduced as legislation, or 2) announced by a member of Congress with publicly available maps. Proposed National Monuments: areas proposed by the President or a member of Congress to protect objects of historic or scientific interest. The proposal must be: 1) introduced as legislation or 2) announced by a member of Congress with publicly available maps. Citizens' Wilderness Inventory Areas: lands that have been inventoried by citizens groups, conservationists, and agencies and found to have defined “wilderness characteristics.” The proposal has been publicly announced.

¹⁴ The extent of upland habitat that needs to be protected is sensitive to site-specific resources. For example: the NECO Amendment to the CDCA Plan protects streams within a 5-mile radius of Townsend big-eared bat maternity roosts; aquatic and riparian species may be highly sensitive to changes in groundwater levels.

¹⁵ Adjacent: lying contiguous, adjoining or within 2 miles of park or state boundaries. (Note: lands more than 2 miles from a park boundary should be evaluated for importance from a landscape-level linkage perspective, as further defined in footnote 12).